

What is claimed is:

1. A forehearth color concentrate comprising a non-smelted agglomerated interspersed of particles for use in coloring glass, said concentrate comprising by weight from about 50% to about 95% of a glass component and from about 4% to about 50% of a binder, said glass component comprising by weight from about 15% to about 35% chromium oxide.
2. The forehearth color concentrate according to claim 1 wherein the glass component comprises one or more glass frits comprising by weight from about 5% to about 30%  $\text{Na}_2\text{O}$ , from about 15% to about 60%  $\text{SiO}_2$ , from about 0% to about 25%  $\text{B}_2\text{O}_3$ , from about 0% to about 25%  $\text{K}_2\text{O}$ , from about 0% to about 3%  $\text{Li}_2\text{O}$ , from about 0% to about 2%  $\text{Al}_2\text{O}_3$ , from about 0% to about 15%  $\text{CaO}$ , from about 0% to about 5%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$  and from about 15% to about 35% chromium oxide.
3. The forehearth color concentrate according to claim 2 wherein the one or more glass frits further comprise up to about 20% by weight of one or more coloring oxides.
4. The forehearth color concentrate according to claim 1 wherein the glass component comprises a glass frit comprising by weight from about 8% to about 22%  $\text{Na}_2\text{O}$ , from about 30% to about 45%  $\text{SiO}_2$ , from about 4% to about 18%  $\text{B}_2\text{O}_3$ , from about 1% to about 9%  $\text{K}_2\text{O}$ , from about 0% to about 2%  $\text{Li}_2\text{O}$ , from about 0% to about 1%  $\text{Al}_2\text{O}_3$ , from about 0% to about 5%  $\text{CaO}$ , from about 0% to about 3%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$ , up to about 20% coloring oxides, and from about 17% to about 33% chromium oxide.
5. The forehearth color concentrate according to claim 1 wherein the binder comprises a silicate of an alkali metal selected from the group consisting of potassium, lithium and sodium.

6. The forehearth color concentrate according to claim 5 wherein the binder comprises sodium silicate.

7. A method for coloring a molten base glass in a forehearth furnace comprising the steps of:

- (i) providing a color concentrate comprising a non-smelted agglomerated interspersed of particles, said concentrate comprising by weight from about 50% to about 95% of a glass component and from about 4% to about 50% of a binder, said glass component comprising by weight from about 15% to about 35% chromium oxide;
- (ii) adding the color concentrate to the molten base glass contained in a forehearth so as to impart color to the molten base glass; and
- (iii) cooling the molten base glass to form a colored glass composition.

8. The method according to claim 7 wherein the glass component comprises one or more glass frits comprising by weight from about 5% to about 30%  $\text{Na}_2\text{O}$ , from about 15% to about 60%  $\text{SiO}_2$ , from about 0% to about 25%  $\text{B}_2\text{O}_3$ , from about 0% to about 25%  $\text{K}_2\text{O}$ , from about 0% to about 3%  $\text{Li}_2\text{O}$ , from about 0% to about 2%  $\text{Al}_2\text{O}_3$ , from about 0% to about 15%  $\text{CaO}$ , from about 0% to about 5%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$  and from about 15% to about 35% chromium oxide.

9. The method according to claim 7 wherein the glass component comprises a glass frit comprising by weight from about 8% to about 22%  $\text{Na}_2\text{O}$ , from about 30% to about 45%  $\text{SiO}_2$ , from about 4% to about 18%  $\text{B}_2\text{O}_3$ , from about 1% to about 9%  $\text{K}_2\text{O}$ , from about 0% to about 2%  $\text{Li}_2\text{O}$ , from about 0% to about 1%  $\text{Al}_2\text{O}_3$ , from about 0% to about 5%  $\text{CaO}$ , from about 0% to about 3%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$ , up to about 5% coloring oxides, and from about 17% to about 33% chromium oxide.

10. The method according to claim 9 wherein the binder comprises a silicate of an alkali metal selected from the group consisting of potassium, lithium and sodium.

11. A colored glass composition formed by the method of claim 7.
12. A color concentrate glass frit for use in either forming a non-smelted agglomerated interspersed particles for use as a forehearth color concentrate or for use as a direct addition to the forehearth of a glass furnace, said glass frit comprising by weight from about 5% to about 30%  $\text{Na}_2\text{O}$ , from about 15% to about 60%  $\text{SiO}_2$ , from about 0% to about 25%  $\text{B}_2\text{O}_3$ , from about 0% to about 25%  $\text{K}_2\text{O}$ , from about 0% to about 3%  $\text{Li}_2\text{O}$ , from about 0% to about 2%  $\text{Al}_2\text{O}_3$ , from about 0% to about 15%  $\text{CaO}$ , from about 0% to about 5%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$  and from about 15% to about 35% chromium oxide.
13. The color concentrate glass frit according to claim 12 wherein the glass frit further comprises up to about 20% by weight of one or more coloring oxides.
14. The color concentrate glass frit according to claim 12 wherein the glass frit comprises by weight from about 8% to about 22%  $\text{Na}_2\text{O}$ , from about 30% to about 45%  $\text{SiO}_2$ , from about 4% to about 18%  $\text{B}_2\text{O}_3$ , from about 1% to about 9%  $\text{K}_2\text{O}$ , from about 0% to about 2%  $\text{Li}_2\text{O}$ , from about 0% to about 1%  $\text{Al}_2\text{O}_3$ , from about 0% to about 5%  $\text{CaO}$ , from about 0% to about 3%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$ , up to about 5% coloring oxides, and from about 17% to about 33% chromium oxide.
15. A method for coloring a molten base glass in a forehearth furnace comprising the steps of:
- (i) providing a color concentrate glass frit comprising weight from about 5% to about 30%  $\text{Na}_2\text{O}$ , from about 15% to about 60%  $\text{SiO}_2$ , from about 0% to about 25%  $\text{B}_2\text{O}_3$ , from about 0% to about 25%  $\text{K}_2\text{O}$ , from about 0% to about 3%  $\text{Li}_2\text{O}$ , from about 0% to about 2%  $\text{Al}_2\text{O}_3$ , from about 0% to about 15%  $\text{CaO}$ , from about 0% to about 5%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$  and from about 15% to about 35% chromium oxide;
  - (ii) adding the color concentrate to the molten glass contained in the forehearth furnace so as to impart color to the molten base glass; and

(iii) cooling molten base glass to form a colored glass composition.

16. A colored glass composition formed by the method of claim 15.

17. A method of forming a forehearth color concentrate for use in coloring glass comprising a non-smelted agglomerated interspersion of particles formed by the steps of:

(i) providing one or a blend of more than one glass frit to provide a powdered glass component comprising by weight from about 15% to about 35% chromium oxide;

(ii) providing a binder;

(iii) thoroughly mixing said glass component and said binder to form a mixture; and

(iv) compacting the mixture to form said color concentrate.

18. The method according to claim 17 wherein the glass component comprises one or more glass frits comprising by weight from about 5% to about 30%  $\text{Na}_2\text{O}$ , from about 15% to about 60%  $\text{SiO}_2$ , from about 0% to about 25%  $\text{B}_2\text{O}_3$ , from about 0% to about 25%  $\text{K}_2\text{O}$ , from about 0% to about 3%  $\text{Li}_2\text{O}$ , from about 0% to about 2%  $\text{Al}_2\text{O}_3$ , from about 0% to about 15%  $\text{CaO}$ , from about 0% to about 5%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$  and from about 15% to about 35% chromium oxide.

19. The method according to claim 18 wherein the one or more glass frits further comprise up to about 20% by weight of one or more coloring oxides.

20. The method according to claim 1 wherein the glass component comprises a glass frit comprising by weight from about 8% to about 22%  $\text{Na}_2\text{O}$ , from about 30% to about 45%  $\text{SiO}_2$ , from about 4% to about 18%  $\text{B}_2\text{O}_3$ , from about 1% to about 9%  $\text{K}_2\text{O}$ , from about 0% to about 2%  $\text{Li}_2\text{O}$ , from about 0% to about 1%  $\text{Al}_2\text{O}_3$ , from about 0% to about 5%  $\text{CaO}$ , from about 0% to about 3%  $\text{TiO}_2$ , from about 0% to about 1%  $\text{F}_2$ , up to about 5% coloring oxides, and from about 17% to about 33% chromium oxide.